

## REMARKS

In the Final Office Action dated November 28, 2007 (the "Final Office Action,") claims 31, 33, and 37 were rejected under 35 U.S.C. § 102(b) as being anticipated by Cherny (U.S. Patent No. 5,852,808, "Cherny"). In addition, claims 1-30, 32, and 34-36 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Cherny.

Applicants respectfully traverse each of these rejections and request reconsideration of the above referenced application in light of the Remarks that follow.

The undersigned's Remarks are preceded by related comments of the Examiner, presented in small bold-faced type font.

In order to discuss the outstanding rejections and the differences between the claimed invention and the cited prior art, the undersigned contacted Examiner Nga B. Nguyen to request an interview. The Examiner courteously responded to the request. The interview took place on April 4, 2008.

### A) Summary of the interview with Examiner Nguyen on April 4, 2008:

The undersigned extends her appreciation for the time and opportunity granted by the Examiner to discuss the outstanding issues regarding this application.

During the course of the interview, the undersigned explained to the Examiner Applicants' claimed invention as well as Cherny's, discussing their differences and the reasons why Cherny does not anticipate nor render obvious Applicants' claimed invention. The presented arguments, as explained to the Examiner in the course of the interview are detailed below in the "Rejections" Section B.

B) Rejections:

Overview

Before addressing the specific arguments that have been presented in the Final Office Action to support the 102(b) and 103(a) rejections, as well as the Responses to Applicants' arguments, Applicants respectfully submit that an overview of Applicants' invention, in comparison with Cherny's invention may help to understand why these two inventions are different and why Applicants' claimed invention is neither anticipated nor rendered obvious by Cherny.

Applicants' claimed invention:

Applicants' claimed invention is drawn to a method of identifying comparable instruments, in particular bonds. Such a tool is desirable when managing financial assets, such as when adjusting the components in a portfolio, pricing a new issue, analyzing the behavior of different market segments and implementing various trading strategies. In order to determine if certain instruments are comparable, their market behavior must be similar. Accordingly, Applicants' claimed method includes the steps of identifying a plurality of factors which are associated with the instruments, and determining a value for each of said plurality of factors for each of the instruments. Next, the method teaches to form a covariance matrix where the covariance matrix includes a weighting factor for each of the plurality of factors and where each of the weighting factors relates to an amount of market activity attributed to the corresponding one of the plurality of factors. Finally, the comparability of the at least two instruments is determined based on the values of factors for each of the securities and the covariance matrix.

Cherny:

Cherny is not concerned with a method of determining the comparability of at least two bonds or two instruments. Cherny is concerned with devising a strategy to provide professional liability insurance coverage to professionals who have publicly traded corporations as clients. To that effect, Cherny builds a portfolio which contains the securities in each of the publicly traded clients of the professional to be covered (Cherny, col. 3, lines 44-47):

*[T]he invention involves trading in the very securities whose value has been adversely affected by an alleged professional liability triggering event.*  
Cherny, col. 3, lines 31-33 (emphasis added).

The portfolio is constructed taking into consideration the probability of a professional liability event occurring, and the relative amount by which the market value of companies would be affected by a liability triggering effect. The distribution of the numbers corresponding to the quantities of securities in each company is selected by computing a minimum variance portfolio of those securities, calculated from an adjusted variance-covariance matrix of those securities.

The strategy that Cherny discloses is designed to cover professionals from changes due to liability triggering events in the value of THOSE particular securities in each of the publicly traded companies that the professional to be covered has as clients. This shows that Cherny is not concerned with comparing securities, because there would be no point in doing that. Cherny is not interested in switching securities. That would defeat the purpose of his invention. Cherny is only concerned in figuring out how many shares to buy in each one of the securities, based on their weight in the portfolio, and the risk of each security being affected by a liability triggering event. Thus, while Cherny mentions in passing that securities may rise or fall together, Cherny is concerned with a different problem than Applicants'.

**Cherny and Applicants' claimed invention are drawn to different methods**

Applicants respectfully submit that not only are Cherny's and Applicants' objectives different, but also their methods are different. While some of the terms found in Applicants' claims are mentioned in Cherny, the terms are used to articulate a different invention. It is fundamental that not only the individual claim terms be considered, but that the steps are borne into consideration when comparing Cherny with Applicants' invention. As stated in the MPEP, "[t]o anticipate a claim, the reference must teach every element of the claim" (MPEP, § 2131) and "the claimed invention as a whole must be considered" (MPEP, § 2141.02). Cherny uses some of the terms in Applicants' claims, such as a covariance matrix and "factors". However, Applicants' claimed invention comprises many other limitations, and each one of them must be considered and anticipated by Cherny to support a 102(b) rejection. The present invention is not drawn to individual elements standing alone, but rather is directed to how these elements are put together in a method

that consists of a number of steps that are executed to achieve a goal-- establishing the comparability of two financial instruments.

Discussion of "Factors"

In Applicants' claimed invention the "factors" are those variables that affect the spread of a bond. These factors are first identified and then their respective values or weights are calculated. The Final Office Action adopts two different positions (A and B) with regards to where Cherny discloses Applicants' "factors", citing two different passages of Cherny. These citations disclose two different concepts that can be confused with Applicants' factors, yet none of them correspond conceptually to them:

A. The first position in the Final Office Action (page 3, lines 15 and 21, pg. 6, lines 8-9, pg. 7, lines 19-20) is that Cherny discloses Applicants' "factors" in column 4, line 60 through column 5, line 25. In this passage, Cherny discusses "factors"  $x_i$  related to a particular security, each with its related weight  $a_i$ . Cherny then takes these factors and weights to calculate a single number per security: the audit failure index ("AFI"), and uses this single number to modify a (separate) covariance matrix by simply multiplying or dividing the  $ij$ th and  $ji$ th terms of the matrix by this number. Thus, in Cherny, the "behavior" of each security with respect to each one of the  $x_i$  factors is ignored, as it is all combined into a single index: the AFI. It is then this AFI that is used to modify the covariance matrix. The "values" for each one of the factors are not incorporated into the covariance matrix, a single combined number is used. Thus, it would be possible for two securities to have very dissimilar behaviors for factors  $x_i$ , and yet their AFI indexes could be the same. This is radically different from Applicants' claimed invention, where this information is analyzed and used to determine the comparability of two instruments:

*[T]he determination of whether two bonds share the same risks is dependent on whether each of their respective spreads behave similarly given certain market factors and risks*  
Applicants' Specification, pg. 7, lines 20-22.

B. The second position of the Final Office Action (page 2, line 15 - pg. 3, lines 14) is that Cherny discloses Applicants' "factors" in column 3, line 55 through column 4, line 60. In this passage, Cherny labels as "factors" the AFI and a market value index. However, these are single

value indexes. Cherny does not disclose weighting factors for each of the AFI and the market value index (as opposed to their respective values). Applicants' claims require that each factor have a value and a weighting factor.

Therefore, Cherny's factors do not fit, neither under position A nor under position B, the description of Applicants' factors, given the required limitations of these factors in Applicants' claims. This is demonstrated in detail in the chart presented below. The chart follows the premise set by each one of the positions A and B taken by the Final Office Action, and looks for the correspondence between Cherny's disclosure and Applicants' remaining claim limitations. As the chart demonstrates, both positions have logical flaws, and neither results in logical correspondence between both disclosures.

#### Discussion of "Covariance Matrix"

Cherny also mentions a covariance matrix. In Applicants' claimed invention, the covariance matrix is constituted by the values and the weights of the factors. In Cherny, on the other hand, the variance-covariance matrix is constituted by the securities in the baskets, adjusted per two values (the AFI and a market value index). The resulting matrix provides the distribution of numbers of positions in the securities in the baskets (i.e., the relative number of shares of stock in each one of the companies). Thus, here is another difference, while in Applicants' claimed invention the factors that will constitute the covariance matrix are identified as those variables which affect the spread (i.e., they are not predetermined, but they depend on each security), in Cherny, which securities will constitute the covariance matrix is not subject to any analysis as, in accordance with the invention, they must correspond to each of the publicly traded clients of the professional to be covered. If this were not so, Cherny's invention would defeat its own purpose.

#### Comparison of Cherny and the Claimed Invention

As briefly discussed above, the logic supporting the rejections presented in the Final Office Action is flawed for the reasons detailed below in the form of a chart. Although Cherny and Applicants' Specification use some common terms, all claim limitations must be taken into account. Claim terms linking different steps in the method become especially critical in maintaining a logical

line of reasoning. As the chart will demonstrate, Cherny discloses some of Applicants' claim terms in an unrelated fashion to Applicants.

The Final Office Action has taken two different positions with regards to the disclosure of Applicants' "factors" in Cherny: A and B, as shown below, and as previously discussed. If one then tries to find the correspondence of the remaining Applicants' claim terms in Cherny, taking the premise set by either one of these positions as facts, the correspondence fails. In other words, neither position can logically sustain that Cherny then discloses the rest of Applicants' claim terms. As an example claim, consider Applicants' claim 31. Similar analysis can be applied to the other independent claims.

Elements of Claim 31	Correspondence to the Disclosure in Cherny under:	
	Final Office Action Position A	Final Office Action Position B
<i>A computer-implemented method for determining the comparability between at least two instruments, comprising the steps of:</i>	The two instruments are securities from publicly traded clients of the professional to be covered (col. 3, lines 46-47).	The two instruments are securities from publicly traded clients of the professional to be covered (col. 3, lines 46-47).
<i>identifying a plurality of factors associated with said at least two instruments;</i>	The factors correspond to factors $x_i$ in col. 4, line 48 - col. 5, line 11.	The factors correspond to: (1) the relative probability of a professional liability triggering event occurring, which can be referred to as the triggering event index (col. 4, lines 22-26), and (2) the relative amount by which the market value of two companies would be affected by a liability triggering event, and can be referred to as

		the market value index (col. 5, lines 12-15).
<i>determining a value for each of said plurality of factors for each of said at least two instruments;</i>	The values for each of the factors correspond to values 1 to 10 for each $x_i$ in col. 4, line 48 - col. 5, line 11.	<p>(1) The triggering event index:</p> <p>“One relatively simple way is to determine a factor by statistical or actuarial methods that reflects the increased likelihood of an audit failure for the <math>j</math>th company relative to the <math>i</math>th company and then simply multiply both the <math>ij</math>th and <math>j</math>th terms by that factor as the triggering event index. Alternatively, both terms could be divided by that factor, or could be adjusted by a triggering event index derived from those probabilities in a more complex way.</p> <p>A particularly preferred mathematical representation of an audit failure index AFI (for use where the professional is an accounting firm and the triggering event is an audit failure) for a particular security is:</p>

		<p> <math>AFI = a_1x_1 + a_2x_2 + a_3x_3 + a_4x_4 + a_5x_5</math>  where <math>a_1 &gt; a_2 &gt; a_3 &gt; a_4 &gt; a_5 &gt; 0</math> and  <math>\sum_{i=1}^5 a_i = 1</math>  and where each <math>x_i</math> is a factor related to the security as follows:  <math>x_1</math> : The nature, stability, degree of competition, and general economic health of the industry(ies) in which the entity operates;  <math>x_2</math> : Management's reputation, integrity, operating philosophy, financial state, and prior operating results;  <math>x_3</math> : The nature, age, size and operating structure of the entity;  <math>x_4</math> : The control environment and significant management and accounting policies, practices and methods;  <math>x_5</math> : The accounting system and control procedures; each <math>x_i</math> </p>
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		<p>ranging from 1 to 10, with 1 being the best and 10 being the worst. These scoring scales are associated with the different degrees of difficulty in gathering and evaluating the evidentiary material, which is reflected by the related weights <math>a_i</math>. Accordingly, AFI can range from 1 to 10.”</p> <p>(2) The market value index: “There are several ways to compute the market value index. For example, if the total value of publicly held securities of the <math>ij</math>th company is ten times that of publicly held securities of the <math>j</math>th company, one or both of the <math>ij</math>th and <math>j</math>th terms could simply be multiplied, or divided, by 10. However, the market value index in accordance with the present invention preferably is computed by taking a value about midway between the two values, such as the average, or the median, of the two values,</p>
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		and then assigning as the market value index for the $ij$ th term the ratio of the value of the $i$ th company to that midway value, and assigning as the market value index for the $j$ th term the ratio of the value of the $j$ th company to the midway value. Each term is then preferably multiplied by its assigned market value index" (col. 5, lines 28-41).
<i>forming a covariance matrix, said covariance matrix including a weighting factor <u>for each</u> of said plurality of factors wherein each of said weighting factors relates to an amount of market activity attributed to said corresponding one of said plurality of factors; and</i>	<p>The weighting factors for each of the plurality of factors <math>x_i</math> would correspond to weights <math>a_i</math> in col. 4, line 48 - col.5 , line 11.</p> <p><b>FLAW:</b> If the correspondence presented above is true, then, this step is not disclosed as the covariance matrix in Cherny <u>does not include</u> "a weighting factor <u>for each</u> of said plurality of factors". The covariance matrix in Cherny includes <u>a single</u> factor</p>	<p><b>FLAW:</b> If the correspondence presented above is true, then, this step is not disclosed as the covariance matrix in Cherny <u>does not include</u> "a weighting factor <u>for each</u> of said plurality of factors". Cherny teaches how to calculate the value of each one of the factors, but not of the weighting factors for each one of the triggering event index the market value index.</p>

	number: the audit failure index AFI, which is multiplied or divided by the $ij$ th and $j$ th terms in the covariance matrix or the market value index, which is then assigned and multiplied by the $ij$ th and $j$ th terms.	
<i>determining the comparability of said at least two instruments based on said values for each of said at least two instruments and said covariance matrix,</i>	<p><b>FLAW:</b> If the covariance matrix of the last step is not disclosed in Cherny, this step cannot be disclosed.</p> <p>In addition, if the values for each of the factors correspond to values 1 to 10 for each <math>x_i</math> in col. 4, line 48 - col.5, line 11, Cherny does not disclose determining the comparability of said at least two instruments based on <math>x_i</math> for each of said at least two instruments and said covariance matrix.</p>	<p><b>FLAW:</b> If the covariance matrix of the last step is not disclosed in Cherny, this step cannot be disclosed.</p> <p>In addition, if the values for each of the factors correspond to AFI in col. 4, line 54 and the market value index in col. 5, lines 28-41, Cherny does not disclose determining the comparability of said at least two instruments based on AFI and the market value index for each of said at least two instruments and said covariance matrix.</p>
<i>wherein at least one of said steps is implemented with a computer.</i>		

<b>CONCLUSION</b>	<b>NO ANTICIPATION</b>	<b>NO ANTICIPATION</b>
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For at least all the foregoing reasons, Applicants respectfully submit that Cherny neither anticipates nor renders Applicants' claimed invention obvious.

### **Response to Arguments/Amendment**

Next, Applicants respectfully address each of the responses to Applicants' arguments presented in the previous Response, which was submitted September 5, 2007, in reply to the Office Action dated June 5, 2007:

**In response to the applicant arguments regarding to claims 31, 33 and 37 that Cherny does not disclose "identifying a plurality of factors associated with said at least two instruments", examiner submits that Cherny discloses in column 3, line 55 through column 4, line 20, in the adjusted variance-covariance matrix, the  $ij$ th term and the  $j$ th term reflect the expected performance of the  $i$ th security relative to the  $j$ th security based on ordinary market relationships, thus Cherny does concern with determining the comparability of at least two securities.**

Office Action, pg. 2.

Applicants respectfully submit that identifying a plurality of factors associated with said at least two instruments and determining the comparability of at least two securities are two different issues and that the second cannot be used to support disclosure of the first. In addition, Applicants respectfully submit that Applicants' claims require "determining the comparability of said at least two instruments based on said values for each of said at least two instruments and said covariance matrix", not calculating the expected performance of the a security relative to the another security based on "ordinary market relationships", as the chart above demonstrates. Every claim term must be taken into consideration when evaluating a claim, and adjectives such as "said" cannot be ignored. As stated in the MPEP, "[t]o anticipate a claim, the reference must teach every element of the claim" (MPEP, § 2131)).

Moreover, see column 4, line 20 through column 5, line 50, the standard variance-covariance matrix is adjusted based on two factors: one factor on which adjustments are based is the relative probability of a professional liability triggering event occurring, and can be referred to as the triggering event index, if the professional to be covered is an accounting firm, the liability triggering event might be an audit failure, for the two companies represented by the  $ij$ th and  $j$ th terms, it is possible to assign factor for the relative probability of an audit failure occurring, etc...; the second factor on which adjustments are based is the relative amount by which the market value of the two companies would be affected by a liability triggering event, and can be referred to as the market value index, for example, computing the market value index, if the total value of publicly held securities of the  $ij$ th company is ten times that of publicly held security of the  $j$ th company, one or both of the  $ij$ th and  $j$ th terms could simply be multiplied, or divided, by 10. Thus, in Cherny, the step of forming a variance-covariance matrix requires that the matrix include the values determined for each of the at least two factors (the triggering event index and the market value index) identified to be associated with the securities whose comparability is to be determined (the  $ij$ th term and the  $j$ th term reflect the expected performance of the  $i$ th security relative to the  $j$ th security based on ordinary market relationships)

Final Office Action, pg. 2-3.

As explained in the chart above, Applicants respectfully submit that if one interprets the factors to correspond to Cherny's AFI and market value index, then Cherny does not teach how to calculate the weights for each one of these factors. Thus, the Final Office Action's argument does not hold.

and the step of determining the comparability of the securities is based on the values of the at least two factors identified to be associated with the securities and the variance-covariance matrix formed. Therefore, Cherny does disclose "identifying a plurality of factors associated with said at least two instruments."

Final Office Action, pg. 3.

As explained in the chart above, Applicants respectfully submit that if one interprets the factors to correspond to Cherny's AFI and market value index, then Cherny does not teach forming a covariance matrix, said covariance matrix including a weighting factor for each of said plurality of factors wherein each of said weighting factors relates to an amount of market activity attributed to said corresponding one of said plurality of factors. Thus, the Final Office Action's argument does not hold.

In addition, as stated above, identifying a plurality of factors associated with said at least two instruments and determining the comparability of at least two securities are two different issues and the second cannot be used to support disclosure of the first.

**In response to the applicant arguments regarding to claims 31, 33 and 37 that Cherny does not disclose “determining a value for each of said plurality of factors for each of said at least two instruments”, examiner submits that Cherny discloses in column 4, line 60 through column 5, line 10, each  $x$  is a factor related to the security, and each  $x$  ranging from 1-10, 1 being the best and 10 being the worst. Therefore, Cherny does disclose “determining a value for each of said plurality of factors for each of said at least two instruments.”**

Final Office Action, pg. 3.

As explained in the chart above, Applicants respectfully submit that if one interprets the factors in Cherny to correspond to factors  $x_i$  in col. 4, line 48 - col. 5, line 11, then the weighting factors for each of the plurality of factors  $x_i$  must correspond to weights  $a_i$  in col. 4, line 48 - col. 5, line 11. In this case, the step “forming a covariance matrix, said covariance matrix including a weighting factor for each of said plurality of factors wherein each of said weighting factors relates to an amount of market activity attributed to said corresponding one of said plurality of factors” is not disclosed, as the covariance matrix in Cherny does not include “a weighting factor for each of said plurality of factors”. Thus, the Final Office Action’s argument does not hold.

**In response to the applicant arguments regarding to claims 1-30, 32, and 34-36 that there is no motivation to modify Cherny’s teachings, examiner submits that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Cherny discloses other securities related to the current value of a corporation (e.g., bonds, etc.) (column 3, lines 5-10), the securities will be shares of stock, but other securities could be used (column 3, lines 47-55). Cherny discloses the comparability of at least two stocks, Cherny also specified that bonds could be used, thus it is obvious to modify Cherny’s to apply the comparability of at least two bonds.**

**In response to the applicant arguments regarding to claim 9 that Cherny does not disclose a “primary bond”, examiner submits that the primary bond recited in the claim does not have any specific feature different to the other bonds, thus examiner treated the primary bond as a bond in comparing with the other bonds and applying the same rejection as claim 1 above.**

Final Office Action, pg. 4.

As explained in the chart above, the claimed invention must be considered as a whole. Applicants respectfully submit that determining which bond is a primary bond or not is a part of the whole scheme of the claimed invention, and cannot be taken apart from it and considered alone with the benefit of the knowledge provided by Applicants' Specification. Thus, Applicants respectfully submit that Cherny does not teach, mention or suggest "primary bonds".

**In response to the applicant arguments regarding to claim 11, examiner treated the claimed invention as comparing a group of bonds with the other groups of bonds, similar as comparing a bond with the other bonds, and applying the same rejection as claim 1 above.**

Final Office Action, pg. 4.

Applicants respectfully submit that the fact that Cherny discusses the meaning of the  $i$ th and  $j$ th terms in its variance-covariance matrix, does not mean that Cherny discloses "determining the comparability of said at least two instruments based on said values for each of said at least two instruments and said covariance matrix," as detailed in the chart above. Applicants already explain in the Specification that:

*Although historical spread correlation is the generally accepted benchmark for determining whether two bonds are comparable, there are several problems in using such a benchmark for comparability. First, because statistical correlation is based solely on the historical performance of the bonds being compared, the results do not necessarily reflect market factors that may affect future performance of the bonds. Also, a substantial amount of accurate historical data is required to determine whether past similar behavior of two instruments is either a result of comparability or is merely a coincidence. For many bond issues, sufficient historical data is not available to reliably make this determination. In particular, for newly issued bonds there is no historical data upon which to base such a comparability determination. Furthermore, comparability based only on historical spread correlation gives no insight as to why comparable bonds move in a particular way and whether the bonds are exposed to similar risk factors.*

Specification, pg. 2-3.

**In response to the applicant arguments regarding to claims 20-29, examiner submits that Cherny discloses the steps of generating a factor vector, generating a covariance matrix, calculating a comparability, thus it is obvious in Cherny that Cherny's invention would contain "a factor vector generator", "a covariance matrix generator", "a comparability calculator" in order to perform the above steps.**

Final Office Action, pg. 2-3.

## Response to claim rejections

In response to the Final Office Action's sustained 102 and 103 rejections, which correspond word for word to those presented in the previous Office Action dated June 5, 2007 (the "Office Action"), Applicants respectfully sustain the arguments presented in the previous Response, which was submitted September 5, 2007. The Remarks are reproduced here:

### Claim Rejections – 35 USC § 102

Claims 31, 33, and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Cherny, U.S. Patent No. 5,852,808.

Regarding to claim 31, Cherny discloses method for determining the comparability of at least two instruments, comprising the steps of:

identifying a plurality of factors associated with said at least two instruments (column 4, line 60 - column 5, line 25);

determining a value for each of said plurality of factors for each of said at least two instruments (column 5, lines 50-65);

forming a covariance matrix, said covariance matrix including a weighting factor for each of said plurality of factors wherein each of said weighting factors relates to an amount of market activity attributed to said corresponding one of said plurality of factors (column 4, lines 20-47);

determining the comparability of said at least two instruments based on said values for each of said at least two bonds and said covariance matrix (column 4, lines 1-10, e.g., the covariance of a steel company and an automobile company might be about 0.2, the covariance of a bus company and an airline would be -1.0).

Office Action, pg. 5-6.

Applicants respectfully disagree with the statement in the Office Action that claims 31, 33 and 37 are anticipated by Cherny under 35 U.S.C. 102(b). To support a rejection under 35 U.S.C. § 102(b) the cited prior art of reference must disclose each element of the rejected claim(s) in the manner recited by the claim.

In Applicants' independent claim 31, the different required steps of the method refer back to the identified plurality of factors associated with said at least two instruments, namely, the instruments whose comparability is to be determined. Thus, the values determined for each of the plurality of factors for each of said at least two instruments, are those values of the factors identified in association with the instruments to be compared. The step of forming a covariance matrix also requires that the matrix include the values determined for each of the plurality of factors identified to be associated with the instruments whose comparability is to be determined. Further, the step of



determining the comparability of the at least two instruments, is based on the values of the plurality of factors identified to be associated with the instruments and the covariance matrix formed.

For at least the foregoing reasons, Cherny does not disclose at least the elements of independent claim 31 “identifying a plurality of factors associated with said at least two instruments.” In addition, Applicants respectfully disagree with the assertion that “identifying a plurality of factors associated with said at least two instruments” is disclosed in column 4, line 60 - column 5, line 25 of Cherny. The section of Cherny cited in the Office Action to support this statement discloses a number of factors related to a security for the calculation of a particularly preferred mathematical representation of an audit failure index AFI (Cherny, col. 4, lines 49-61). Thus, the cited text does not teach identifying a plurality of factors associated with said at least two instruments, the comparability of which is to be determined. Cherny is not concerned with determining the comparability of at least two instruments. Cherny is concerned with devising a strategy to provide professional liability insurance coverage to professionals who have publicly traded corporations as clients. To that effect, Cherny builds a portfolio of securities taking into consideration the probability of a professional liability event occurring, and the relative amount by which the market value of two companies would be affected by a liability triggering effect. The distribution of the quantities of securities in each company within the portfolio is selected by computing a minimum variance portfolio of those securities, calculated from an adjusted variance-covariance matrix of those securities. The objective of such a computation is to minimize the risk of a portfolio. Hence, the field of Cherny’s invention is different from Applicants’, and so is the method used.

Cherny, in the text cited in the Office Action also mentions “the relative amount by which the market value of the two companies would be affected by a liability triggering event.” Again, this citation does not teach at least the Applicants’ claimed limitations “identifying a plurality of factors associated with said at least two instruments,” (whose comparability is to be determined by the method claimed by Applicants). No plurality of factors associated with two instruments whose comparability is to be determined is identified in Cherny.

Further, Applicants respectfully disagree with the assertion in the Office Action that “determining a value for each of said plurality of factors for each of said at least two instruments” is disclosed in column 5, lines 50-65 of Cherny. The cited section of Cherny recites:

*[C]ommonly, numerical techniques which are especially well-suited for digital computers.*

*The result of the optimization of the variance-covariance matrix will be a collection of coefficients or weights  $x_{ip}$  representing the relative quantities of securities in each company in which positions should be established to provide the desired coverage in accordance with the invention. If the coefficients are normalized so that they total 1.0, that normalized set of coefficients could be thought of as representing one "unit" of professional liability coverage. The number of "units," and thus the total number of securities of each company, in which positions are to be established would depend on the amount of coverage required of desired by the professional, as discussed below.*

*In a preferred embodiment of the invention, the computation of weights associated with the securities that comprise...*

Cherny, col. 5, lines 50-65 (emphasis added)

Applicants respectfully submit that as the underlined text indicates, Cherny refers to a number of weights which represent the amount of securities in each company the portfolio providing the liability coverage should have, not the weight of each one of the factors Cherny refers to earlier in col. 4, lines 60 - col. 5, line 11. The weights referred to by Cherny do not represent either the value for each of said plurality of factors for each of said at least two instruments (whose comparability is to be determined by Applicants' claimed method). Therefore, “determining a value for each of said plurality of factors for each of said at least two instruments” is not disclosed by Cherny.

For similar reasons, the limitations “forming a covariance matrix, said covariance matrix including a weighting factor for each of said plurality of factors wherein each of said weighting factors relates to an amount of market activity attributed to said corresponding one of said plurality of factors” and “determining the comparability of said at least two instruments based on said values

for each of said at least two instruments and said covariance matrix” are not disclosed by Cherny either.

For reasons similar to those just presented, the fact that Cherny discloses that “the covariance of a steel company and an automobile company might be about 0.2, the covariance of a bus company and an airline would be -1.0” cannot be used to support a 35 U.S.C. 102(b) rejection of Applicants’ claim limitations “determining the comparability of said at least two instruments based on said values for each of said at least two instruments and said covariance matrix.”

Thus, not only does Cherny not anticipate claim 31, but it does not provide any guidance either to one of skill in the art on how to arrive at Applicants’ claimed invention. Cherny is not concerned with determining the comparability of at least two instruments, but with providing professional liability insurance through a portfolio of securities with minimized risk.

Claims 33 and 37 depend from independent claim 31, and define further features and steps of the method. Accordingly, these claims are patentable for at least same the reasons noted above with respect to claim 31, as well as for the additional features recited therein.

For at least the foregoing reasons, Applicants respectfully request that the Examiner withdraw the 35 U.S.C. 102(b) rejection of claims 31, 33 and 37. Notice to the effect that claims 31, 33 and 37 are in condition for immediate allowance is respectfully requested.

#### **Claim Rejections – 35 USC § 103**

Claims 1-30, 32, and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cherny, U.S. Patent No. 5,852,808.

Regarding to claim 1, Cherny discloses method for determining the comparability of at least two stocks, comprising the steps of:

identifying a plurality of factors associated with said at least two stocks (column 4, line 60 - column 5, line 25);

determining a value for each of said plurality of factors for each of said at least two stocks (column 5, lines 50-65);

forming a covariance matrix, said covariance matrix including a weighting factor for each of said plurality of factors wherein each of said weighting factors relates to an amount of market activity attributed to said corresponding one of said plurality of factors (column 4, lines 20-47);

determining the comparability of said at least two stocks based on said values for each of said at least two stocks and said covariance matrix (column 4, lines 1-10, e.g., the covariance of a steel company and an automobile company might be about 0.2, the covariance of a bus company and an airline would be -1.0).

Cherny does not disclose comparing two bonds. However, bond is a well-known financial instrument. Therefore, it would have been obvious to one with ordinary skill in the art at the time the invention was made to modify Cherny's to replace "a stock" by "a bond", for the purpose of providing more efficiency in comparing two bonds.

Office Action, pg. 7-8.

Applicants respectfully traverse the 35 U.S.C. 103(a) rejection for at least the reason that the Office Action has not been established a *prima facie* case of obviousness (see MPEP § 2142).

Applicants respectfully submit that a *prima facie* case of obviousness has not been established because (a) even if Cherny was modified, it does not describe or suggest all of the claimed limitations of at least independent claims 1, 9, 11, 12 and 20; and (b) there is no motivation to modify the teachings of Cherny.

(a) Even if Cherny was modified, it does not describe or suggest all of the claimed limitations of the present invention:

The rationale presented by Applicants above to traverse the 35 U.S.C. 102(b) rejection applies to the traversal of the 35 U.S.C. 103(a) rejection of claims 1, 9, 11, 12 and 20.

Further, Applicants agree with the statement in the Office Action that Cherny does not provide any teachings directed to bonds.

(b) There is no motivation to modify Cherny's teachings:

The Office Action has provided the following arguments to support the statement that it would have been obvious to a person of ordinary skill in the art to modify Cherny:

However, bond is a well-known financial instrument. Therefore, it would have been obvious to one with ordinary skill in the art at the time the invention was made to modify Cherny's to replace "a stock" by "a bond", for the purpose of providing more efficiency in comparing two bonds.

Office Action, pg. 4.

Applicants respectfully disagree with the statement that "it would have been obvious to one with ordinary skill in the art at the time the invention was made to modify Cherny's to replace "a stock" by "a bond", for the purpose of providing more efficiency in comparing two bonds" for at least the reason that effecting such a substitution would not result in Applicants' claimed invention.

As discussed earlier, Cherny is not concerned with a method of determining the comparability of at least two bonds. In fact, Cherny is not even concerned with a method of determining the comparability of at least two stocks or at least two instruments. As explained earlier, Cherny is concerned with devising a strategy to provide professional liability insurance coverage to professionals who have publicly traded corporations as clients. To that effect, Cherny builds a portfolio of securities taking into consideration the probability of a professional liability event occurring, and the relative amount by which the market value of two companies would be affected by a liability triggering effect. The distribution of the numbers corresponding to the quantities of securities in each company is selected by computing a minimum variance portfolio of those securities, calculated from an adjusted variance-covariance matrix of those securities. The objective of such a computation is to minimize the risk of a portfolio. Hence, not only is the field of Cherny's invention different from Applicants', but so is the method used.

Thus, if faced with the problem of determining the comparability of two bonds, or even if faced with the problem of determining the comparability of two stocks, one of skill in the art would not resort to Cherny as a source of guidance. Moreover, even if one of skill in the art did resort to Cherny, there would be no disclosure whether modified or not, to arrive at Applicants' claimed invention.

**Claim 9 contains similar limitations found in claim 1 above, therefore, is rejected by the same rationale.**

Office Action, pg. 6.

Applicants respectfully submit that the Office Action does not provide evidence showing that Cherny discloses or refers to at least a "primary bond." Applicants respectfully submit that the Office Action states that claim 9 contains "similar limitations" found in claim 1, but it but does not provide any explanation as to why Cherny renders claim 9 obvious. Applicants respectfully submit that the Office Action does not "clearly explain" to Applicants the "pertinence" of the cited prior art (see MPEP § 707, § 707.05, § 707.07(f)-(g)).

Hence, Applicants hereby respectfully request that a more detailed action on the rejection of claim 9 is provided addressing all claim limitations involved, or that the claim rejection be withdrawn.

**Claim 11 contains similar limitations found in claim 1 above, therefore, is rejected by the same rationale.**

Office Action, pg. 6.

Applicants respectfully submit that the Office Action does not provide evidence showing that Cherny discloses or refers to at least “determining the comparability between said portfolio of bonds and said index of bonds based on said values for said portfolio of bonds, said values for index of bonds and said covariance matrix.” Applicants respectfully submit that the Office Action states that claim 11 contains “similar limitations” found in claim 1, but it does not provide further explanation as to why Cherny renders claim 11 obvious. Applicants respectfully submit that the Office Action does not “clearly explain” to Applicants the “pertinence” of the cited prior art (see MPEP § 707, § 707.05, § 707.07(f)-(g)).

**Claims 12-19 contain similar limitations found in claims 1-8 above, therefore, are rejected by the same rationale.**

Office Action, pg. 6.

Applicants respectfully traverse this rejection for at least reasons provided earlier with respect to the claim limitations shared with claim 1.

**Claims 20-29 are written in apparatus and contain similar limitations found in claims 1-8 above, therefore, are rejected by the same rationale.**

Office Action, pg. 6.

Applicants respectfully submit that the Office Action has not provided evidence showing that Cherny discloses or refers to at least “a factor vector generator,” “a covariance matrix generator,” and “a comparability calculator.” Applicants respectfully submit that the Office Action states that claims 20-29 contain “similar limitations” found in claims 1-8, but it does not provide further explanation as to why Cherny renders claims 20-29 obvious. Applicants respectfully submit that the

Office Action does not “clearly explain” to Applicants the “pertinence” of the cited prior art (see MPEP § 707, § 707.05, § 707.07(f)-(g)).

Applicants respectfully submit that for at least the foregoing reasons, the Office Action has not presented a convincing line of reasoning as to why the artisan would have found the claimed invention to be obvious in light of the teachings of the prior art references (see MPEP § 2142).

Hence, Applicants respectfully submit that at least independent claims 1, 9, 11, 12, 20 and 31 are distinguishable over Cherny and notice to the effect that the pending independent claims are in condition for immediate allowance is respectfully requested.

Claims 2-8 depend directly or indirectly from independent claim 1, claim 10 depends from claim 9, claims 13-19 depend directly or indirectly from claim 12, claims 21-30 depend directly or indirectly from claim 20, and claims 32-37 depend directly or indirectly from claim 31, respectively, and define further features and steps of the method, system or program code. Accordingly, these claims are patentable for at least the reasons noted above with respect to claims 1, 9, 11, 12, 20 and 31 as well as for the additional features recited therein. Notice to the effect that dependent claims 2-8, 13-19, 21-30 and 32-37 are in condition for immediate allowance is respectfully requested.

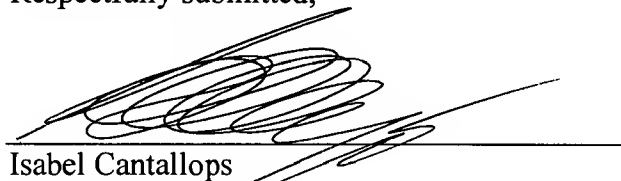
CONCLUSION

Claims 1, 9, 11, 20 and 31 have been amended. Claims 1-37 are now pending and are believed to be in condition for allowance. For the reasons set forth above, allowance of this application is courteously urged. The Examiner is respectfully requested to reconsider the application at an early date with a view towards issuing a favorable action thereon. If there remain any questions regarding the present application or any of the cited references, or if the Examiner has any further suggestions for expediting allowance of the present application, the Examiner is cordially requested to contact the undersigned at (212) 895-1376 in order for the undersigned to arrange for an interview with the Examiner.

The Commissioner is authorized to charge and fees required in connection with this submission to Deposit Account No. 50-0521.

Respectfully submitted,

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Isabel Cantallops  
Reg. No. 57,710

Clifford Chance US LLP  
31 West 52<sup>nd</sup> Street  
New York, NY 10019-6131  
Telephone: (212) 895-1376